



Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and
Space Administration

September 15, 2004
Building 1, Room 920L
2:00 – 4:00 pm

Attendees

CCB members and other attendees are listed in Attachment 1.

Agenda Item 1: HRFM Schedule Conflict – Jack Keifenheim/NASA-KSC & Paul Nemeth/LMSO

- Jack Keifenheim/NASA-KSC
 - Flip flop of what was planned – ship back to JSC on January 24, 2005
 - No problem with HCOR
 - Issue with configuration – KSC needs to learn how to integrate PTCS
 - October is busy time at KSC, some key people may not be available
 - New Action Item (04-092) – Paul Nemeth/LMSO & Jack Keifenheim/NASA-KSC: formulate a schedule
 - Schedule risk for HRFM with MELFI rack
 - Jack Keifenheim trying to hold HRFM schedule
 - Steve Porter wants to have vote on whether UF 1.1 should have priority over HRFM
 - MPLM testing moved to October 2004
 - New Action Item (04-093) – Jack Keifenheim/NASA-KSC: to telecon Steve Porter next week
- Steve Porter/NASA-JSC/EA
 - New Action Item (04-094) - LMSO/KSC/AMS Collaboration: work together to create a process schedule (pre-test readiness review, pre-requirements review [test procedure review])



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Agenda Item 2: Change Requests – Mike Fohey/LMSO & Trent Martin/LMSO

- CR AMS-02/D-003 (issued as AMS-CR-04-003): PTRS for the AMS-02 Payload Integration Hardware (Revision A) submitted by Mike Fohey/LMSO
 - New Action Item (04-095) – Nancy Munoz/NASA-JSC/EA: will check to see if the PTRS appendix can be modified and not have to submit a new change request
 - New Action Item (04-096) – Jack Keifenheim/NASA-KSC: will send his response to CR AMS-02/D-003
 - New Action Item (04-097) – EC: will send response to CR AMS-02/D-003
 - New Action Item (04-098) – Nancy Munoz/NASA-JSC/EA: to send email to Automation, Robotics, & Simulation Division (ER) and Structural Engineering Division (ES) for response to CR AMS-02/D-003
 - New Action Item (04-099) – David Kaplan/NT: to get with Mike Fohey to re-emphasize his concerns
 - New Action Item (04-100) – Donna Cox/LMSO: after receiving all CR Evaluations from remaining mandatory evaluators, send email to AMS Project Team to ask for any final input on CR AMS-02/D-003
 - Mike Capell/AMS requested that prior to document being made final, that the document highlight changes made; satisfied with changes made.
 - Steve Porter will sign off on CR (assuming all replies received) out of CCB on Monday, September 20, 2004
- CR AMS-02/D-004: Master Schedule Modification submitted by Trent Martin/LMSO
 - It was noted that anytime a major change made to schedule, a new change request must be submitted
 - New Action Item (04-101) – Donna Cox/LMSO: will send email to Giuliano Laurenti/AMS for his response to CR AMS-02/D-004



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- [New Action Item \(04-102\) – Nancy Munoz/NASA-JSC/EA](#): to send email to Automation, Robotics, & Simulation Division (ER) and Structural Engineering Division (ES) for response to CR AMS-02/D-004
- Trent Martin would like to baseline a two page schedule and milestone list that is directly tied to the 14 page schedule as a support document
- Steve Porter stated that Mike Capell and Bill Hungerford to stick to schedule and be able to meet schedule and integration
- CR AMS-02/D-004 Withdrawn
 - [New Action Item \(04-103\) – Trent Martin/LMSO & Steve Porter/NASA-JSC/EA](#): to discuss whether schedule at higher level needs to be under CCB control; to talk subject further at later date

Agenda Item 3: Action Item Status – Steve Porter/NASA-JSC/EA

- [Action Item \(04-007\) – Bob Miley/NT](#)
 - Win Reid stated waiver not submitted; doesn't think waiver will get through
 - Steve Porter - someone must waive the envelope; program must recognize we are in that space; AMS is on official manifest, someone else needs to be constrained
 - Win Reid to submit waiver by October 5, 2005
- [Action Item \(04-010\) – JJ Conwell/MO](#): action item closed
- [Action Item \(04-044\) – Steve Porter/NASA-JSC/EA & Peter Fisher/AMS](#): Jack Keifenheim at KSC to determine how to get Xenon fill; what hardware does AMS need?
 - Steve Porter stated there isn't PCU Xenon fill capability at KSC, Mike Capell to procure or find procurement for Xenon fill
 - Steve Porter to send email to Donna Cox to close out this action item
- [Action Item \(04-053\) – Paul Nemeth/LMSO, Anne Vaughan/DO5, Ray Echols/NASA-MSFC, & Geoff Lochmaier/NASA-MSFC](#)



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- MSFC POIC have facility to get command and control of payload; controllers of payload at JSC once activated on truss; MSFC to send to JSC, if problem occurs, issue to be worked through MSFC not Mission Control at JSC
- General command will be sent to MSFC and will be passed through to JSC
- Steve Porter stated it was a non-problem
- Action item closed September 15, 2004
- [Action Item \(04-073\) – Mike Capell/AMS](#): identify power allocation – 2400 control, 3000 max to go into PIA; PIA to be signed off
 - Win Reid to send documentation that states what kilowatts have been designated for AMS to Steve Porter
 - Bob Miley to expedite issue
- [Action Item \(04-018\) – David Kaplan/NT](#): to work offline with Trent Martin and Mike Fohey; would like to defer presentation 1 week; carve out man-hours for LOE
- [New Action Item \(04-104\) – Jack Keifenheim/NASA-KSC](#): send ITA for next year to Steve Porter
- [New Action Item \(04-105\) – John Cornwell/EC](#): when presenting information on thermal blanket, need to make sure it is in plan; get with Trent Martin and give summary to Steve Porter
- New action items have been added to the Open Action Items Matrix (Attachment 2). Note: The Open Paper Management Tool (OPMT) to replace the Open Action Items Matrix in the near future.

Steve Porter adjourned meeting at 3:15 pm.

CCB Chairman Approval:

Date:

10/4/04



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Attachment 1

CCB Sign-in Sheet



Alpha Magnetic Spectrometer
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Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



National Aeronautics and
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September 15, 2004
2:00 - 4:00 pm
Building 1, Room 920L

<u>Name</u>	<u>Org</u>	<u>Signature</u>
Donna Cox	LMSO	Donna Suzanne Cox
Helene Hill	LMSO	Helene Hill
Larissa Arnold	NASA/DOE	Larissa Arnold
Ed Rains	OZ4	Ed Rains
Nancy Manoz	EA	Nancy Manoz
John Stanford	NT3	John Stanford
Carlos G. Boncan	NT62	Carlos G. Boncan
Craig Clark	LMSO	Craig Clark
DAVID KAPLAN	NT	David Kaplan
John Cornwell	EC	John Cornwell
Evelyn Orndoff	EC	Evelyn Orndoff
MIKE FOHEY	LMSO	Mike Fohey
Trent Martin	LMSO	Trent Martin
STEVE PORTER	NASA	Steve Porter
PAUL NEHEM	LM	Paul Nehem
Winston J. Reid	OZ2	Winston J. Reid



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Attachment 2

Open Action Items Matrix

AMS Open Action Items Matrix

NOTE: Items in Blue are changes made to this version

Number	Date Assigned	Meeting Action Assigned	Action	Actionee (Note that the FIRST actionee is the Action Lead)	Due Date	Outcome	Date Completed
04-083	08/18/04	CCB 08/18/04	Update Action Item Matrix, sort by due date, and post on the AMS website.	Donna Cox	08/20/04		08/19/04
04-084	08/18/04	CCB 08/18/04	Add EA2 representative Irene Piatek to the CCB member list and CCB distribution list.	Donna Cox	08/20/04		08/19/04
04-086	08/18/04	CCB 08/18/04	Make copy of AMS-CR-04-001 and AMS-CR-04-002 and all pertinent documentation to be filed in LMSO Document Library. Originals to be returned to Nancy Munoz to be filed in EA project office.	Donna Cox	08/20/04		08/23/04
04-087	08/18/04	CCB 08/18/04	Update Action Item Matrix so that action items 04-007, 04-010, 04-018, 04-044, 04-053, and 04-073 show that they are on the agenda for the CCB Meeting scheduled on September 8, 2004.	Donna Cox	08/20/04		08/20/04
04-088	08/18/04	CCB 08/18/04	To get a draft of the flight manifest and/or to contact Jorge.	Bob Miley Win Reid	08/25/04	09/10/04 - electronic copy with url delivered 09/03/04 - Hardcopy package of the proposed draft assembly sequence delivered to Porter	09/10/04
04-091	08/18/04	CCB 08/18/04	Find out the conference room phone number and include this information on the next agenda and on any email sent out with the dial-in information.	Donna Cox	08/31/04		09/07/04
04-018	07/15/04	Rebaselining	Define the plan for the assuring quality and reliability for the NASA provided Payload Integration Hardware (PIH) as well as the plan for providing insight into the quality and reliability of the AMS Experiment.	Dave Kaplan	09/08/04	Memorandum in work; process is ongoing	

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04-062	08/01/04	CERN TIM July 2004	Provide a decision point for eCos -vs- Linux software operating systems, as this decision is required NOW to prevent work resources waste.	Bill Hungerford	09/08/04	08/18/04 - Bill Hungerford will discuss action items with Mike Capell and provide new date when action will be complete. 08/31/04 - Per Mike Capell this has been resolved. We will use an eCos solution. Software architecture for FIT (and correspondingly our leading candidate for flight) is fixed and we feel confident to meet FIT goals.	08/31/04
04-070	08/04/04	CCB 08/04/04	Dredge up crew photo requirements from OZ and crew office	Bob Miley	09/15/04	09/14/04 - In work. Win Reid spoke with L. D. Stevenson about this in mid-August and again on 9/2/04. L.D. will get with the VIT Team to see if they have any requirements.	
04-079	08/04/04	CCB 08/04/04	Get with Bill Hungerford to discuss ideas for framework, processing and typing of level 3 appendix	Mike Fohey	09/15/04	08/11/04 - Meeting scheduled for 08/18/04 to discuss	
04-006	07/15/04	Rebaselining	CAWG/PICB documentation needs to be retrieved from the station website and posted on the AMS website (get with Bob Miley)	Donna Cox	09/18/04	08/01/04 - Plan due by 09/18/04; 08/09/04 - Sent email to Bob Miley; 08/11/04 - Bob Miley to send links to Donna Cox; 08/17/04 - Bob Miley sent urls to Donna Cox	
04-007	07/15/04	Rebaselining	Submit waiver for payload envelope and robotics clearance through AMS CCB and then through PICB	Bob Miley	09/18/04	09/15/04 - Waiver not submitted yet - the ISS plan for the adjacent PAS site is evolving. The EXPRESS Pallet development has slipped into the 2006 timeframe. 08/11/04 - Plan waiver action was added to 09/08/04 agenda	
04-008	07/15/04	Rebaselining	CEIT? Shuttle guys to look at the payload so there are no problems with installation/integration – put on schedule	Paul Nemeth	09/18/04	Spoke with Jack Keifenheim & he agrees that CEIT is SOP for KSC processing whilst the Bird is on the Pad; When I get the input from Jack, I will present my plan at CCB; 08/11/04 - Paul Nemeth to provide writeup	

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04-010	07/15/04	Rebaselining	Will clarify the BFS GPC time tagged command in PIA per Steve Porter	JJ Conwell	09/18/04	09/08/04 - JJ talked to Darrel Stamper and it is clear there will be no problem doing this BFS command for AMS. The SSP has done similar BFS commands during ascent before. The AMS Project should continue to expect to get this BFS command from the Shuttle software. This action should be closed. 08/01/04 - Plan due by 09/18/04; JJ Conwell to talk at the meeting on 09/08/04	09/08/04
04-011	07/15/04	Rebaselining	To present detailed MIP/ICD plan to CCB – must include interim dates	JJ Conwell MOD/OZ	09/18/04	09/07/04 - Here are the ISS-Shuttle agreed to MIP development dates: ISS MIP submission 10-1-04; SSP response 12-1-04; MIP meeting 1-15-05; MIP CR 3-1-05; MIP baseline 4-1-05. MIP Kickoff Meeting took place on August 25, 2004.	09/07/04
04-012	07/15/04	Rebaselining	Present logic train of control for ACOP and AMS to CCB (per Steve Porter)	Paul Nemeth	09/18/04	Will present by 09/18/04	
04-026	07/15/04	Rebaselining	How to go about determining how to solve the magnetic field problem; PAS; programmatic waiver?	Bob Miley	09/18/04	Draft waiver to complete S3 outboard empty or have items that magnetically susceptible; 08/11/04 - Will be discussing this with Nancy Wilks next week	
04-028	07/15/04	Rebaselining	Check for open consensus report concerning Quech.	Trent Martin Bob Miley Paul Nemeth	09/18/04	08/01/04 - Plan due by 09/18/04; Paul Nemeth spoke Bob Miley 08/09/04 and he is trying to locate the report; Bob Miley sent email - currently reviewing; 08/11/04 - Documentation to be in the 03/05 Hazard Report	
04-031	07/15/04	Rebaselining	Discuss having data available at KSC and support there for flight controllers; MOD requests safety data at JSC	Paul Nemeth	09/18/04	08/01/04 - Plan due by 09/18/04; In work	

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04-032	07/15/04	Rebaselining	Level of detail for the contingency return planning needs to be discussed	MOD/OZ	09/18/04	<p>08/01/04 - Plan due by 09/18/04; 08/11/04 - Larissa Arnold will confirm; 08/20/04 - Larissa Arnold spoke with DX/Jill Reisman and UF4.1 MAGIK/John Bussell, below is the following information that was received on contingency return planning.</p> <p>Nominally, the MAGIK analysis performed for a payload/object is for the trajectory of taking it out of the payload bay and attaching it to station. For payloads/objects that are left on orbit, it is often assumed that if the object would have to be put back in the bay it would use the reverse trajectory and therefore the MAGIK analysis is not performed. Pics and camera views for this reverse trajectory would be known but if any extra berthing cues were needed they wouldn't nominally be available. However the additional analysis for contingency return could be performed if the MAGIK personnel were directed to do that. Also, since it is currently baselined that AMS will return on a shuttle flight, whatever shuttle flight is named for AMS return would perform the analysis of putting it back in the payload bay.</p> <p>John Bussell did say that in the past this reverse analysis</p> <p>DX said, if deemed necessary, for the flight we can have a</p>	
04-038	07/15/04	Rebaselining	Verification tracking log to be controlled by AMS Project Team; track full closure of items; Steve wants application to track each item – open paper management software; must be configuration controlled	Steve Porter Trent Martin Nancy Munoz	09/18/04	08/01/04 - Plan due by 09/18/04; Working on getting OPMT or similar system; 08/11/04 - Steve Porter will handle this action	
04-042	08/04/04	CERN TIM July 2004	Develop plan for certification of CO2 condenser in TCS	Craig Clark	09/18/04	08/01/04 - Plan due by 09/18/04; In work	

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04-056	08/01/04	CERN TIM July 2004	Provide the plan for Surveillance of Safety Critical assembly and test steps of Collaboration Hardware.	Chris Tutt Bill Hungerford Paul Nemeth	09/18/04	08/01/04 - Plan due by 09/18/04; In work	
04-073	08/04/04	CCB 08/04/04	Steve Porter needs numbers for turn on, nominal operations, worst case cold case, and survival as soon as possible for the PIA due out October 2004	Mike Capell	09/24/04	In work	

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04-043	08/01/04	CERN TIM July 2004	Modify the PIA power allocation for AMS from current allocation to 3.0 kW peak, 2.3 kW nominal, 3.0<TBD kW>2.3kW for worst case cold, and TBD<2.2kW for survival.	Bob Miley Paul Nemeth	09/30/04		
04-044	08/01/04	CERN TIM July 2004	Determine if the ISS PCU Xenon fill capability can be used for the AMS P/L.	Steve Porter Peter Fisher	09/30/04	08/11/04 - Action for Jack Keifenheim to talk to KSC about capability; 08/16/04 - Jack Kefenhiem researching, needs AMS Collaboration to tell KSC what they need; it is possible KSC might have equipment to configure this; will present at meeting on 09/08/04; 08/17/04 - Peter Fisher (MIT) will be coordinating requirements in the experiment side	
04-046	08/01/04	CERN TIM July 2004	Build an integrated logic flow, assembly, and test (LFAT Schedule?) schedule and for the payload at CERN. Include a clear plan for Quality Control and MRB Authority for the payload integration and assembly at CERN. Ensure that an iterative electrical / functional test scheme is included to ensure adequate operation of hardware / software before access to that "installed" crate or detector is no longer possible.	Bill Hungerford	09/30/04	08/01/04 - Plan due by 09/18/04; Questionare sent to detector groups to initiate process. Meeting scheduled at CERN Sept 13 and 14, chaired by Giuliano Laurenti, to consolidate and refine inputs from various detector and sub-system groups. Should result in development of preliminary LFAT Schedule for review at October TIM	
04-047	08/01/04	CERN TIM July 2004	Plan for meeting of Code T and Prof. Ting.	Steve Porter	09/30/04		
04-048	08/01/04	CERN TIM July 2004	Set up meetings for Prof Ting during the TIM at JSC with Center Director, Dir of EA, ISS Program Manager, OZ, and Doug Cooke.	Steve Porter Yolanda Marshall	09/30/04		
04-049	08/01/04	CERN TIM July 2004	Present a plan and coordination for AMS TIM's at JSC and KSC; FIT test at KSC	Donna Cox Jack Kefenhiem	09/30/04	08/01/04 - Plan due by 09/18/04; Currently working on list of international visitors with L. Barrin at CERN; Goal is to have requests submitted to KSC no later than 11/12/04	

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04-050	08/01/04	CERN TIM July 2004	Review AMS with Doug Cooke wrt providing Radiation Shielding for Exploration and discuss the need to maintain the NASA POC with the current AMS Team.	Steve Porter Trent Martin	09/30/04		
04-051	08/01/04	CERN TIM July 2004	Finalize SSRMS requirements around the AMS-02	OZ/Bob Miley	09/30/04	08/01/04 - Plan due by 09/18/04; 08/11/04 - Needs hazard report	
04-052	08/01/04	CERN TIM July 2004	Begin the discussion wrt to AMS-02 PAO Effort.	Steve Porter Trent Martin	09/30/04		
04-054	08/01/04	CERN TIM July 2004	Review the thermal survival potential and testing requirements for AMS Detectors and Electronic Crates. Provide a recommendation for a "cold soak" tolerance test (based on ISS Program recommendation to expect 8 hrs./event X 3 events/year powerdown) for Collaboration hardware testing.	Craig Clark Bill Hungerford Paul Nemeth	09/30/04	08/01/04 - Plan due by 09/18/04	
04-055	08/01/04	CERN TIM July 2004	Review the composite panel strength testing results and requirements from the Structures Working Group with variability of data and relative paucity of data.	Chris Tutt	09/30/04	08/01/04 - Plan due by 09/18/04	
04-058	08/01/04	CERN TIM July 2004	Provide the plan for Phase II Safety Review and Collaboration preview and dry runs.	Chris Tutt Bill Hungerford	09/30/04	08/01/04 - Plan due by 09/18/04	

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04-059	08/01/04	CERN TIM July 2004	Determine if the JSC EEE Parts Board needs to review the AMS P/L electronics parts / processes / documentation.	Dave Kaplan	09/30/04		
04-060	08/01/04	CERN TIM July 2004	Show requirements for AMS Critical health data transmission via S-Band.	Paul Nemeth Bob Miley	09/30/04	In work	
04-063	08/01/04	CERN TIM July 2004	Make sure software test at KSC for Final Flight Hardware Test is funded.	Paul Nemeth	09/30/04		
04-064	08/01/04	CERN TIM July 2004	Provide information to Collaboration Assembly & Integration Team @ CERN on a smart-tool for anthropomorphic analysis of AMS Assembly.	Chris Tutt	09/30/04	08/01/04 - Plan due by 09/18/04	
04-089	08/18/04	CCB 08/18/04	To work with AMS Collaboration about ISS stowage problem and develop a plan for the number of harddrives that will be required for AMS.	Bill Hungerford	09/30/04		
04-090	08/18/04	CCB 08/18/04	Manifest two ACOPs - One primary and one as "spare." To work on when ACOP needs to fly and if it needs to be in place 3-6 months ahead of AMS-02. Then they need to get with Bob Miley to further discuss ACOP.	OZ/Bob Miley Paul Nemeth Bill Hungerford	09/30/04		
04-068	08/04/04	CCB 08/04/04	Define detector steps for the MVP	Bill Hungerford	10/01/04		